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Mark Watson Mark Watson

By Signature

Application No.	:	**09/681,790**
Confirmation No.	:	**1728**
Appellant	:	**DeVries**
Title	:	**A SYSTEM AND METHOD FOR SHARING MATCHED INTERESTS WITHOUT DISCLOSING NON-SHARED INTERESTS**
Filed	:	**June 5, 2001**
TC/A.U.	:	**3621**
Examiner	:	**BAYAT, Bradley B.**
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APPEAL BRIEF

I. REAL PARTY IN INTEREST

The subject application is assigned to Microsoft Corporation, of Redmond Washington.

II. RELATED APPEALS AND INTERFERENCES

There are no known related appeals or interferences.

III. STATUS OF CLAIMS

Claims 1 through 23 represent all claims currently pending in the application. These claims are provided for reference in the attached Appeal Brief Appendix. The rejection of claims 1-23 is hereby appealed.

IV. STATUS OF AMENDMENTS

No amendments are currently pending.

V. SUMMARY OF THE INVENTION

In general, the Appellant's invention is embodied in a system and method for automatically sharing common interests between two or more entities via a unique turn-based system of progressive partial disclosures which is used in determining matched interests without disclosing non-matched interests. Further, unlike conventional schemes for disclosing or sharing common interests, the matching provided by the Appellant's is accomplished without the use of an intermediary application, scheme, or process in order to avoid the disclosure of the interests of any of the entities to any third party, including conventional third party "trusted agents." Consequently, there is no database, application, process, etc., that is external to any entity to which the interests of that entity are disclosed or revealed for the purposes of determining whether any of the entities interests match those of any other entity. Note that the term "entity" is defined to mean individual users, individual computer systems, or other individual electronic devices.

In general, the particular interests of the various entities are represented by a string of bits that in one embodiment represents alphanumeric characters such as letters, numbers or other characters, or any other conventional encoding scheme including conventional encryption or plain text. In the most general case, each interest is compared, one bit or character at a time, by disclosing one bit or character at a time for each interest. Then, in one embodiment, as soon as the comparison indicates that one bit or character of an interest of a first entity does not match any other interests of any other entity, the comparison is terminated with respect to the interest being compared. Consequently, where the comparison is terminated, the interest being compared is not completely disclosed. However, the comparison continues for as long as each bit or character continues to match one or more interests of another entity, with bits being disclosed only to those entities where there is a continuing partial match.

One example of determining whether separate entities have matched interests is embodied in buyer/seller relationship where the seller does not wish to disclose his or her entire inventory or prices for items in the inventory, and where the buyer is only interested in certain items within a certain price range. In this example, interests are considered to consist of an object/price pair. Consequently, the seller will specify a price or price range for each object in his inventory. This information, i.e., the seller's set of interests, is then stored in a seller accessible computer readable medium. Further, the buyer will likewise specify a price or price range for each object that he or she is interested in acquiring. Again, this information, i.e., the buyer's set of interests, is then stored in a buyer accessible computer readable medium. The seller's set of interests is then automatically compared to the buyer's set of interests using the turn-wise partial disclosure method described above to determine whether the buyer is interested in purchasing any object that the seller may have to sell at a price that the seller is willing to sell the object for.

In the preceding example, the effect of the turn-based partial disclosure system described by the Appellant is that only interests of the buyer that will be disclosed to the seller are those interests that the buyer has that represent objects in the seller's

inventory that the buyer is willing to buy for a price acceptable to the seller. Conversely, the only interests of the seller that are disclosed to the buyer are those objects in the seller's inventory that the seller is willing to sell for a price acceptable to the buyer. Further, the system and process of the present invention ensures that any objects, and their associated prices, in the seller's inventory that do not match the interests of the buyer are not disclosed to the buyer. Conversely, any objects being sought by the buyer, along with the price that the buyer is willing to pay that do not match the seller's interests are not disclosed to the seller. In other words, the interests of the buyer and seller are maintained in secrecy from each other except as to those interests where the buyer and seller are in agreement.

Another application of the system described by the Appellant involves directing targeted advertising to consumers who are likely to purchase specific products. Further, in a networked environment such as the Internet, such targeted advertising can be automatically provided to a consumer or user via a conventional web browser application. Additionally, such a system and process is also useful for directing consumers to specific vendors. For example, in a networked environment such as the Internet, a conventional web browser can be automatically directed to the web sites of one or more vendors offering products that a consumer or user has an interest in purchasing without disclosing the consumers interests (such as the maximum price that the consumer is willing to pay). This same model is also adaptable to automatically "pushing" any information of interest to a user via a conventional web browser, or "pulling" the user to one or more web sites having any information of interest to the user. Further, in accordance with the present invention, such pushing or pulling of information is accomplished without disclosing the interests of any entity to any other entity not having shared interests, or nearly shared interests.

Other examples of useful applications of the present invention include on-line or Internet based marketplaces or auctions. For example, in one embodiment using a system and method according to the present invention, on-line vendors of goods or services are automatically matched with consumers having an interest in the goods or

services offered by the vendors. Similarly, in a related embodiment users are automatically matched with goods or services available in an on-line auction where the user has an interest in such goods or services, and/or the user is willing to pay a price within a predetermined range of the current auction price for the goods or services. In a further related embodiment, such matching allows for automatic bidding for auctioned goods or services within a predetermined price range specified by the user. In each of these embodiments, non-matching interests or price ranges are not disclosed in accordance with the present invention.

In a further embodiment, a set of possible interests is classified hierarchically, such that approximate matches between the interests of various entities can be identified. For example, in cases where interests are classified hierarchically, approximate matches or nearly shared interests are identified. Such approximate matches are then disclosed to the entities where the matches are sufficiently close. For example, given a hierarchical set of interests including religion, with known religions provided in multiple layers of sub-categories, a Lutheran and Episcopalian share the fact that they are both Christian. Thus, where Christianity is a sufficiently close match in accordance with a predefined closeness metric, the matched interest of Christianity is disclosed, but the specific religious beliefs of each entity are not disclosed because they do not match. Note that this method also allows for disclosure of exact matches.

Further, in one embodiment, the specific interest of each entity is disclosed where they are deemed to be close enough in accordance with the predefined closeness metric. Thus, to expand the preceding example, one exemplary closeness metric for the interest of religion assumes that a Lutheran is closer to an Episcopalian than to a Baptist, yet further from a Muslim; however, a Lutheran is closer to a Muslim than to an Atheist in that the Lutheran and the Muslim both believe in a God, while the Atheist does not. Consequently, one use of the aforementioned closeness metric would be to disclose a belief in a God without disclosing a specific religion to each entity where a first entity is a Lutheran, and a second entity is a Muslim. Further, where a third entity

is an Atheist, nothing would be disclosed to the Atheist, as the third entity does not share the belief in God commonly held by the first and second entities.

Clearly, any interest, having any number of sub-interests or sub-categories, can be implemented in a hierarchical structure. For example of another hierarchical interest set is an interest in "sports," with sub-categories of "team sports" and "individual sports." Further, the sub-category of team sports may include sub-sub-categories of "baseball," "football," and "soccer," while the sub-category of individual sports may include sub-sub-categories of "swimming," "running," "tennis," and "rock climbing." Consequently, using this simple hierarchical interest structure, the broadest match between two entities would simply be an interest in sports, with narrower matches being shared interests in team or individual sports, and the narrowest matched interest being a shared interest in one of the specific sports listed above.

VI. ISSUES

In the Final Office Action dated June 2, 2004, claims 1-23 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,112,181 by Shear et al. ("***Shear***") in view of U.S. Patent 5,926,812 by Hilsenrath et al. ("***Hilsenrath***").

It should also be noted that the Examiner refused to grant a formally filed Applicant Initiated Interview Request, filed August 2, 2004 concurrently with a Request for Reconsideration under 37 CFR §1.116. Appellant requested the Interview to discuss apparent mischaracterizations of both the Appellant's claimed invention, and the art cited by the Examiner. In addition, in the Advisory Action dated September 17, 2004, provided in response to the aforementioned Request for Reconsideration, there is no indication that the Appellants arguments were in any way considered, as the entirety of the response reads "The request for reconsideration has been considered but does NOT place the application in condition for allowance because: ***applicant has argued the prior art references and failed to amend the claims*** to read over the prior art cited." (emphasis added) Appellants do not believe that a Request for Reconsideration

under 37 CFR §1.116 ***requires*** that the claims be amended in order for that Request to be fully considered by the Examiner.

VII. GROUPING OF CLAIMS

Group 1: Claims 1-9 stand or fall together.

Group 2: Claims 10-16 stand or fall together.

Group 3: Claims 17-23 stand or fall together.

VIII. THE EXAMINER'S RATIONALE

In general, the Examiner rejected independent claim 1 under 35 U.S.C. §103(a) based on the rationale that ***Shear*** discloses the elements of claim 1 with the exception of "continuing the progressive comparison for specific interests with respect to each set of interests wherein the specific interest do partially match any interests." The Final Office Action then suggests that this claimed element is disclosed by ***Hilsenrath***. The Final Office Action then rejects each of dependent claims, e.g., claims 2-9 based on the proposed ***Shear / Hilsenrath*** combination.

Specifically, the Examiner's rationale for the rejection of claim 1 under 35 U.S.C. §103(a) as being disclosed by the proposed ***Shear / Hilsenrath*** combination was stated in the Final Office Action dated June 2, 2004 as follows:

> "As per claims 1, Shear teaches a system for determining shared interests between at least two sets of interests, comprising: progressively comparing each interest in each set of interests to interests in every other set of interests (column 14, lines 12-26; figures 16A-C and associated text; column 8, line 26 – column 30, line 50); analyzing the results of the progressive comparison for determining whether any interests belonging to any set of interests partially matches any interests in any other set of interests (column 14, lines 27-30; column 8, line 26 – column 30, line 50);

terminating the progressive comparison for specific interests with respect to each set of interests wherein the specific interests do not partially match any interests (Figures 18-21 and associated text; column 8, line 26 – column 30, line 50) and determining all shared interests between any of the at least two sets of interests by continuing the progressive comparison of interests to identify all interests belonging any set of interests that completely match interests in any other set of interests (Figures 16-20 and associated text; column 8, line 26 – column 30, line 50). Shear does not explicitly teach continuing the progressive comparison for specific interests with respect to each set of interests wherein the specific interests do partially match any interests. Hilsenrath teaches a comparison method for specific interests with respect to each set of interests wherein the specific interests do partially match any interests (Figures 1-5 and associated text; columns 4-13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Shear's system and method for matching with Hilsenrath's cluster generation and cluster similarity measurement to achiever [sic] a more accurate search result or comparison match, as per teachings of Hilsenrath."

In general, the Examiner rejected independent claims 10 and 17 under 35 U.S.C. §103(a) based on the rationale that ***Shear*** discloses the elements of claims 10 and 17 with the exception of "continuing to automatically perform the partial comparison of each encoded interest for specific interests for as long as there is a partial match of the specific interests." The Final Office Action then suggests that this claimed element is disclosed by ***Hilsenrath***. The Final Office Action then rejects each of dependent claims, e.g., claims 11-16, and 18-23, respectively, based on the proposed ***Shear / Hilsenrath*** combination.

Specifically, the Examiner's rationale for the rejection of claims 10 and 17 under 35 U.S.C. §103(a) as being disclosed by the proposed ***Shear / Hilsenrath*** combination was stated in the Final Office Action dated June 2, 2004 as follows:

> "As per claims 10 and 17, Shear teaches a computer-implemented process/computer-readable medium for automatically determining whether unique entities have any matched interests without disclosing non-matched interests, comprising: providing a set of interests for each entity (column 14, lines 12-26; figures 16A-C and associated text; column 8, line 26 – column 30, line 50); encoding each interest for each set of interests (Figure 26C and associated text); partially disclosing each encoded interest in each set of interests to each unique entity (column 27); automatically performing a comparison of each partially disclosed encoded interest with the partially disclosed interests in each other set of interests (column 27); determining whether there is a partial match of interests between the partially disclosed interests of any unique entities (columns 26-28); and automatically identifying interest matches between any unique entities through the continued automatic partial comparison of each encoded interest (Figure 10 and associated text; columns 27-30). Shear does not explicitly teach continuing to automatically perform the partial comparison of each encoded interest for specific interests for as long as there is a partial match of the specific interests. Hilsenrath teaches continuing to automatically perform the partial comparison of each encoded interest for specific interests for as long as there is a partial match of the specific interests between any unique entities (Figures 1-5 and associated text; column 4-13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Shear's system and method for matching with Hilsenrath's cluster generation and cluster similarity measurement to achiever [sic] a more accurate search result or comparison match, as per teachings of Hilsenrath."

IX. ARGUMENT

The following paragraphs first address the Examiner's response to the Appellant's prior arguments, and then address the substance of the rejections with respect to claims 1-23.

A. Examiner's Response to Appellant's Prior Arguments:

Before responding to the substance of the Examiner's rejections regarding claims 1-23, the Appellant would first like to reply to the Examiners "*Response to Arguments*" presented in the Final Office Action dated June 2, 2004.

First, in response to the Appellant's arguments filed March 8, 2004, in the Final Office Action of June 2, 2004, the Examiner characterizes the Appellant's arguments and suggests that those arguments are not persuasive. The Final Office Action then cites Shear et al. ("***Shear***," U.S. Patent 6,112,181) and Hilsenrath et al. ("***Hilsenrath***," U.S. Patent 5,926,812) as fully disclosing the elements argued by the Appellant.

In particular, the Final Office Action first suggests that the Appellant argues that "neither reference teaches a progressive comparison of the interest wherein upon analyzing of certain matches the ***comparison is terminated and then continuing the progressive matching*** (applicant's response pages 8-13)" (emphasis added).

The Final Office Action then explains that "Shear provides for a comprehensive system which can provide for matching for value chains wherein match rule sets can be provided using artificial intelligence or smart agents to carry out applicant's features (column 15-20)." The Final Office Action then suggests that "Hilsenrath also teaches that the process of matching entries is carried out until the desired number is obtained (column 11).

Next, in response to the Appellant's discussion with respect to the failure of either ***Shear*** or ***Hilsenrath*** to teach, or in any way describe, the Appellant's claimed element relating to partial disclosure of information, the Final Office Action suggests that "Shear discloses utilizing controls and rules with regards to distribution of content or matching interest in a VDE environment, wherein delivery of only portions of content from one or more sources is provided (col. 27, lines 8-9, columns 23-30)."

However, as explained in the following paragraphs, the Appellant respectfully suggests that in view of the quoted arguments, the Examiner has incorrectly characterized the Appellant's arguments, incorrectly characterized the Appellant's claimed invention, and incorrectly characterized the ***Shear*** *and* ***Hilsenrath*** *references in an attempt to provide support for the rejections advanced by in the Final Office Action.*

i. **Examiner's Summary of Appellant's Arguments with Respect to "Progressive Comparisons":**

In the Final Office Action, the Examiner summarizes pages 8-15 of the Appellant's prior argument (filed March 8, 2004) as arguing that "***neither reference teaches a progressive comparison of the interest wherein upon analyzing of certain matches the comparison is terminated and then continuing the progressive matching***" (emphasis added). However, the Appellant does ***not*** terminate the progressive comparison and then continue the progressive comparison, as suggested by the Final Office Action. In fact, once the comparison is terminated for a particular interest, that progressive interest is simply ***not*** then continued.

Specifically, the Appellant describes and claims a turn-based ***progressive comparison*** of individual interests which involves a progressive ***partial disclosure*** of specific interests. Again, this partial disclosure is ***not*** a disclosure of some set or subsets of interests, but a partial disclosure of parts of individual interests. For example, the term "***partially disclosing interests***" is clearly explained throughout the text of the specification, with specific examples of such partial disclosure being provided

in the working example in paragraphs 65 through 82. Further, paragraphs 79-81 provide a simple example of a turn-based partial disclosure of interests wherein rather than disclosing a complete interest, each interest is disclosed one part at a time.

For example, as disclosed in the working example of paragraphs 79-81, where an ***individual interest*** in a ***first set of interests*** is represented by the number "178", that interest is first ***partially disclosed*** to a ***second set of interests*** by first disclosing an "8." If the second set of interests does not have an interest that ends with an "8" there is no partial match, and ***the progressive comparison is terminated*** for that particular individual interest. The progressive comparison will ***not*** then continue for that interest. On the other hand, if the second set has one or more interests that end with "8" then the progressive comparison will continue, with the next number "7," being disclosed to the second set. Again, the progressive comparison will continue at this point only where the second set has one or more interests that end in "78." In this example, it should be clear that the ***individual interest*** is "partially disclosed" in three separate stages, rather than simply fully disclosing interest "178" in a full disclosure. If at any time during this partial disclosure, such as for example, after the disclosure of "7," there is not a match with the partially disclosed interests from the second set, then the progressive comparison is terminated for that interest.

Therefore, in contrast to the characterization advanced by the Examiner in the Final Office Action, it should be clear that the Appellant is clearly ***not*** arguing that "***neither reference teaches a progressive comparison of the interest wherein upon analyzing of certain matches the comparison is terminated and then continuing the progressive matching***. Clearly, the Appellant is arguing that the progressive comparison is ***terminated for specific interests where there is no partial match*** of those specific interests, and ***continued only for specific interest where there is a partial match***, as explained above. Note that this interpretation is fully consistent with the language of independent claims 1, 10 and 17.

In addition, in view of independent claims 1, 10, and 17, one clear advantage of such a process is that the partial disclosure and comparison between unique entities ***only*** continues for particular interests as long as there is a continuing match for specific interests. Consequently, non-matching interests will not be fully disclosed to the other unique entities. As a result of this partial disclosure process, non-matching interests are simply not shared with other unique entities. Therefore, the other unique entities will only know those interests of a particular entity that fully match interests held by those other unique entities.

ii. Examiner's Mischaracterization of the *Shear* Reference with Respect to Appellant's Arguments:

A noted above, the Final Office Action suggests that "Shear provides for a comprehensive system which can provide for ***matching for value chains wherein match rule sets can be provided*** using artificial intelligence or smart agents to carry out applicant's features (column 15-20)" (emphasis added). It should be noted that this argument is offered in support of the position of the Final Office Action that the Appellant's claimed "progressive comparison" is disclosed by the ***Shear*** reference. In fact, the only time that the term "matching for value chains" is mentioned in the ***Shear*** reference, is in col. 16, lines 1-7, as one of the "Advantageous Features and Characteristics" of the invention described by ***Shear***. The context of that cited text is provided below:

> "Enables ***matching for value chains*** where ***the matching is against a plurality of co-participating value chain parties requirements*** and/or profiles against match opportunities, and/or matching by matches comprised of match input and/or aggregation of ***match rule sets of providers*** used to 'dock' with one or more user needs, interests, requirements match sets." (emphasis added)

In response, the Appellant respectfully suggest that the "matching of value chains" allegedly disclosed by the ***Shear*** reference clearly has nothing to do with the

Appellant's "progressive comparison." In particular, it should be noted that the term "value chain" is not specifically defined by the *Shear* reference. However, this term, as commonly used in the typical business environment is defined to mean a high-level model of how businesses receive raw materials as input, add value to the raw materials through various processes, and sell finished products to customers. This is a very well known concept that is taught in conventional business schools.

Further, one of the named inventors identified in the ***Shear*** patent reference, Mr. Victor H. Shear, described the term "value chain" in his testimony before the United States Senate Judiciary Committee on April 3, 2001. A summary of this testimony is available online at http://judiciary.senate.gov/oldsite/te040301vs.htm. In this testimony, Mr. Shear explains the following:

> "The architecture InterTrust has developed supports ***value chain relationships based on traditional commercial principles*** – we call this digital enabling of value chains 'chain of handling and control'. ***This means that each actor in the value chain is able to create the rules it wishes to apply to the material in question within the scope of authority granted to the participant by the previous or governing actors in the value chain.*** A publisher could establish the commercial terms for a work within the authority granted by the author; the distributor could then set rules within the scope of authority granted by the publisher and so on through the value chain, all in accordance with law and accepted practice." (emphasis added).

Clearly, in the context of the ***Shear*** reference, the "value chains" do not represent "progressive comparisons" of individual partially disclosed interests. In fact, it should be clear that in the context of the ***Shear*** reference, "value chains" are used in matching operations with respect to particular "rights" or "rules" defined by value chain participants.

For example, see claim 23 of the ***Shear*** reference which recites the following:

> "The method of claim 1 wherein said sending to the user step the associated rights management information at least in part governs ***at least one value chain right***." (emphasis added)

Similarly, claim 65 of the ***Shear*** reference recites the following:

> "The method of claim 48 wherein ***said rules and controls include at least one value chain rule and control***." (emphasis added)

Similarly, claim 107 of the ***Shear*** reference recites the following:

> "The method of claim 91 wherein said ***rules and controls govern at least one value chain right***." (emphasis added)

Clearly, ***Shear*** not only discloses, but ***claims***, that an "***aggregation of match rule sets of providers***" are used to better match one or more user needs, interests, or requirements ***for value chain participants***. Further, it should be equally clear that specifying or otherwise defining sets of "rules" or "rights" for controlling matches for value chain participants, as disclosed and claimed by ***Shear*** has nothing whatsoever to do with the Appellant's claimed progressive comparison of individual interests, as described above, and as clearly claimed. Therefore, as further discussed below in Section 2, with respect to the rejections advanced under 35 U.S.C. §103(a), the ***Shear*** reference fails to provide support for the rejections for which it is offered. Further, in view of the preceding discussion, the Appellant believes that the ***Shear*** reference has been improperly characterized by the Final Office Action.

iii. Examiner's Mischaracterization of the *Hilsenrath* Reference with Respect to Appellant's Arguments:

As with the ***Shear*** reference, the Appellants respectfully suggest that the Final Office Action has also improperly characterized portions of the ***Hilsenrath*** reference. In particular, as noted above, the Final Office Action cites the ***Hilsenrath*** reference as teaching "that the process of matching entries is carried out until the desired number is obtained (column 11)." This argument is offered to counter the Appellants previously presented argument that ***Hilsenrath*** failed to disclose the Appellant's claimed "partial disclosure."

The Appellant's fully agree that column 11 of the ***Hilsenrath*** teaches that ***the process of matching entries*** is carried out ***until the desired number of matches*** is obtained as explained by the Examiner. However, this is ***not*** what is described and claimed by the Appellant. In fact, it appears clear ***Hilsenrath*** provides for a plurality of search criteria (e.g., "search strings") which are sequentially executed ***until a desired number of matches of unique documents containing the words in the separate search strings have been returned*** (see col. 11, lines 5-63).

In contrast, as described above, the Appellant is describing and claiming a ***progressive comparison*** of individual interests which involves a progressive ***partial disclosure*** of specific interests. Again, this partial disclosure is ***not*** a disclosure of some set or subsets of interests, but a partial disclosure of individual interests. For example, as previously explained by the Appellant, ***partially disclosing interests*** is clearly explained throughout the text of the specification, with specific examples of such partial disclosure being provided in the working example in paragraphs 65 through 82. Further, paragraphs 79-81 provide a simple example of a turn-based partial disclosure of interests wherein rather than disclosing a complete interest, each ***individual interest*** is disclosed and compared one part at a time.

Consequently, in stark contrast to the position advanced by the Final Office Action, the Appellant respectfully suggests that sequentially executing multiple search criteria until a predetermined number of documents have been identified has nothing whatsoever to do with the progressive comparison of interests described and claimed by the Appellant. Thus, ***Hilsenrath*** fails to provide support for the arguments for which it is offered. Therefore, as further discussed below in Section 2, with respect to the rejections advanced under 35 U.S.C. §103(a), the ***Hilsenrath*** reference fails to provide support for the rejections for which it is offered. In fact, in view of the preceding discussion, the Appellant believes that the ***Hilsenrath*** reference has been improperly characterized by the Final Office Action.

iv. Examiner's Mischaracterization of the *Shear* Reference Relative with Respect to Appellant's Arguments Regarding Partial Disclosures of Information:

As noted above, in response to the Appellant's discussion with respect to the failure of either ***Shear*** or ***Hilsenrath*** to teach, or in any way describe, the Appellant's claimed element relating to partial disclosure of information, the Final Office Action suggests that "Shear discloses utilizing controls and rules with regards to distribution of content or matching interest in a VDE environment, wherein delivery of only portions of content from one or more sources is provided (col. 27, lines 8-9, columns 23-30)."

However, in col. 27, lines 27, lines 8-9, ***Shear*** merely explains that one of the numerous "Advantages" of the ***Shear*** invention is the capability to provide "delivery of portions of said ***control information*** from one or more sources." (emphasis added). Clearly, ***Shear*** is attempting to explain that the "***control information***" used in determining matches can be received from a plurality of sources.

Further, the VDE is specifically described by ***Shear*** in col. 23, lines 9-11 as a "virtual distribution environment" which simply provides "a family of technologies by which applications can be created, modified, and/or reused." The ability of the ***Shear***

reference to retrieve "*portions*" of its "*control information*" from various sources for modifying how the "virtual distribution environment" will determine matches has nothing whatsoever to do with the partial disclosure disclosed and claimed by the Appellant. In fact, it appears that the only possible connection between the text cited by the Final Office Action and the Appellant's claimed element is the use of the word "portion" as it may relate in some purely theoretical sense to the word "partial."

Again, it should be clear that retrieving "portions" of "control information" from various sources is not a partial disclosure of individual specific interests. Further, the use of portions of control information from various sources for use in a VDE fails completely to disclose the Appellant's claimed turn-based "***partial disclosure***" and comparison of interests in each set of interests which is designed to avoid full disclosure of any non-shared interest between any two or more unique entities. There is simply no commonality, and no support in the ***Shear*** reference for the position advanced by the Final Office Action. Therefore, as further discussed below in Section 2, with respect to the rejections advanced under 35 U.S.C. §103(a), the ***Shear*** reference fails to provide support for the rejections for which it is offered. Further, in view of the preceding discussion, the Appellant believes that the ***Shear*** reference has been improperly characterized by the Final Office Action.

B. Rejections under 35 U.S.C. §103(a):

In view of the discussion provided above with respect to the response of the Final Office Action to the Appellant's arguments filed March 8, 2004, the Appellant respectfully suggest that the references cited by the Final Office Action fail to support the Arguments advanced by the Final Office Action.

Specifically, in the Office Action of November 6, 2003, and again in the Final Office Action of June 2, 2004, claims 1-23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Shear et al. ("***Shear***," U.S. Patent 6,112,181) in view of Hilsenrath et al. ("***Hilsenrath***," U.S. Patent 5,926,812).

However, in order to deem the Appellant's claimed invention unpatentable under 35 U.S.C. §103(a), a prima facie showing of obviousness must be made. However, as fully explained by the MPEP Section 706.02(j), to establish a prima facie case of obviousness, three basic criteria must be met. First, ***there must be some suggestion or motivation***, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, ***to modify the reference or to combine reference teachings***. Second, there must be a ***reasonable expectation of success***. Finally, ***the prior art reference (or references when combined) must teach or suggest all the claim limitations***.

Further, in order to make a prima facie showing of obviousness under 35 U.S.C. 103(a), ***all*** of the claimed elements of an Appellant's invention must be considered, ***especially when they are missing from the prior art. If a claimed element is not taught in the prior art and has advantages not appreciated by the prior art, then no prima facie case of obviousness exists***. The Federal Circuit court has stated that it was error not to distinguish claims over a combination of prior art references where a material limitation in the claimed system and its purpose was not taught therein (*In Re Fine*, 837 F.2d 107, 5 USPQ2d 1596 (Fed. Cir. 1988)).

i. **Rejection of Claims 1-9:**

Independent claim 1 was rejected under 35 U.S.C. §103(a) based on the rationale that ***Shear*** discloses the elements of claim 1 with the exception of "continuing the progressive comparison for specific interests with respect to each set of interests wherein the specific interest do partially match any interests." The Final Office Action then suggests that this claimed element is disclosed by ***Hilsenrath***. The Final Office Action then rejects each of dependent claims, e.g., claims 2-9 based on the proposed ***Shear / Hilsenrath*** combination.

In particular, with respect to independent clam 1, the Final Office Action first suggests that ***Shear*** "teaches a system for... progressively comparing each interest in each set of interests to interests in every other set of interests"

However, as described above with respect to the response of the Final Office Action to the Appellants prior arguments, the "***progressive comparison***" described and claimed by the Appellant involves a ***partial disclosure*** and comparison of parts of interests in each set of interests which is designed to avoid full disclosure of any non-shared interest between sets of interests. ***Shear*** simply fails to disclose, or in any way suggest any such feature.

For example, the Final Office Action cites ***Shear*** column 14, lines 12-26; figures 16A-16C and associated text, and column 8, line 26 through column 30, line 50, as disclosing the Appellant's claimed "progressive comparison."

However, the text cited by the Final Office Action generally discloses methods for using rights management information in a matching, narrowcasting, classifying and/or selecting process. Further, the matching and classification utility system described by ***Shear*** makes use of pre-existing classification schemes, including at least some rights management information and/or other qualitative and/or parameter data indicating and/or defining classes, classification systems, class hierarchies, category schemes, class assignments, category assignments, and/or class membership. (See Abstract).

Further, as illustrated by Figures 5-16C, ***Shear*** discloses that the "matching and classification" is provided via the use of an "***electronic matchmaker***" or "***matching classification system***" which is used to determine whether one or more items from different groups or classes match. For example, as described in col. 9, line 45 through column 14, line 29, and col. 33, line 48 through col. 81, line 6, ***Shear*** generally explains that the "matching and classification utility system 900" includes a "matching engine 906" which "matches things with other things, things with people, and/or people with

other people." However, this matching is generally accomplished using a "secure environment" or a "secure node" for determining whether matches exist.

In other words, ***Shear*** generally describes a system wherein one or more parties or entities ***completely discloses*** particular pieces of information to an "electronic matchmaker" which resides in a "protected processing environment," "secure node," "secure container," etc., wherein the "electronic matchmaker" operates to compare those particular pieces of information to particular pieces of information provided by one or more other parties or entities. Then for each party, the electronic matchmaker proceeds to inform each of the parties which of the particular pieces of information match those of any other party. Further, because the "electronic matchmaker" operates in the "secure" computing environment, particular non-matching pieces of information provided by each entity are not disclosed to other entities outside of the secure computing environment.

Unfortunately, this method requires the use of one or more trusted computing environments (i.e., electronic chips, "secure containers," "secure nodes," etc.) for operation to which each entity ***completely discloses*** particular pieces of information. For example, as described in col. 12, lines 1-19, "the electronic matchmaker can employ a protected processing environment 154 [such as] ...a tamper-resistant 'chip' within the computer -- but it can be hardware-based, software-based, or a combination of hardware and software..." In other words, the "electronic matchmaker" operates as a type of secure "trusted agent" for determining whether particular items of information match between any particular entities. Information is then completely disclosed to the "electronic matchmaker" and matches are then reported back to each entity by the "electronic matchmaker."

However, as described in paragraph 10 of the Appellant's specification, one of the ***stated advantages*** of the Appellant's claimed invention is that "***unlike conventional schemes*** for disclosing or sharing common interests, such disclosure or non-disclosure of interests is accomplished in accordance with the present invention

without the use of a third party, mediation, or trusted agent type application or process for comparing shared or common interests. Consequently, in accordance with the present invention, ***there is no database, application, process, etc. that is external to any entity to which the interests of that entity is disclosed or revealed for the purposes of determining whether any of the entities interests match those of any other entity***." (emphasis added)

Further, as described throughout the Appellant's specification, the matching of shared interests without the use of "trusted agent" type applications (such as the "electronic matchmaker" described by ***Shear***) is accomplished through the use of direct progressive comparisons based on the partial disclosures of particular interests between each set of interests of entity directly. Further, as described above with respect to the working example illustrated in paragraphs 79-81 of the specification, this progressive comparison, in combination with the other elements of the Appellant's claimed invention operates to directly disclose only those interests of one set that match interests in another set by using the claimed progressive comparisons ***without the use of a third party trusted agent type application***, as with the "electronic matchmaker" described by ***Shear***.

Consequently, it should be clear that the progressive comparison of partially disclosed interests, which is one feature of claim 1, is not taught, disclosed, or in any way suggested by ***Shear***. Therefore, as this claimed feature is not taught, disclosed, or in any way suggested by ***Shear***, it should also be clear that further operations involving the claimed progressive comparison are also not taught, disclosed, or in any way suggested by ***Shear***. For example, for the reasons described above, ***Shear*** also fails to disclose "***analyzing the results of the progressive comparison...***", "***terminating the progressive comparison for specific interests... wherein the specific interests do not partially match any interests***", and "***continuing the progressive comparison for specific interests... wherein the specific interests do partially match any interests***." Further, such progressive comparisons are also not disclosed by the ***Hilsenrath*** reference, and in fact, the Final Office Action does not suggest that

Hilsenrath discloses such a capability. (As described by the Examiner in the Final Office Action, ***Hilsenrath*** teaches a "cluster generation and cluster similarity measurement to achieve a more accurate search result or comparison match").

Consequently, no prima facie case of obviousness has been established in accordance with MPEP Section 706.02(j) and in accordance with the holdings of *In Re Fine*. This lack of a prima facie showing of obviousness means that the rejected claim is patentable under 35 U.S.C. §103(a). The basis for this patentability is the nonobvious language of independent claim 1, which includes the following novel language:

> "A system for determining shared interests between at least two sets of interests, comprising:
>
> ***progressively comparing*** each interest in each set of interests to interests in every other set of interests;
>
> ***analyzing the results of the progressive comparison for determining*** whether any interests belonging to any set of interests ***partially matches any interests in any other set of interests***;
>
> ***terminating the progressive comparison*** for specific interests with respect to each set of interests ***wherein the specific interests do not partially match any interests***;
>
> ***continuing the progressive comparison*** for specific interests with respect to each set of interests ***wherein the specific interests do partially match any interests***; and
>
> ***determining all shared interests between any of the at least two sets of interests*** by continuing the progressive comparison of interests to identify all interests belonging any set of interests that completely match interests in any other set of interests." (emphasis added)

Therefore, the Appellant respectfully traverses the rejection of independent claim 1, and thus the rejection of dependent claims 2-9 under 35 U.S.C. §103(a) over ***Shear***

in view of ***Hilsenrath*** in view of the non-obviousness of independent claim 1. Thus, the Appellant respectfully requests reversal of the rejection of claims 1-9 in view of the non-obviousness of claim 1.

ii. **Rejection of Claims 10-16 and 17-23:**

Independent claims 10 and 17 were jointly rejected under 35 U.S.C. §103(a) based on the rationale that ***Shear*** discloses the elements of claim 10 and 17 with the exception of "continuing to automatically perform the partial comparison of each encoded interest for specific interests for as long as there is a partial match of the specific interests." The Final Office Action then suggests that this claimed element is disclosed by ***Hilsenrath***. The Final Office Action then rejects each of dependent claims, e.g., claims 11-16 and 18-23, respectively, based on the proposed ***Shear / Hilsenrath*** combination.

In particular, with respect to independent claims 10 and 17, the Final Office Action suggests that ***Shear*** "teaches... partially disclosing each encoded interest in each set of interests to each unique entity." The Final Office Action offers col. 27 of the ***Shear*** reference in support of this contention.

However, as discussed above with respect to the response of the Final Office Action to the Appellant's prior arguments, the progressive comparison described and claimed by the Appellant involves a "***partial disclosure***" and comparison of interests in each set of interests which is designed to avoid full disclosure of any non-shared interest between any two or more unique entities. As discussed above, ***Shear*** simply fails to disclose, or in any way suggest any such feature. Further, it should be noted that col. 27 of the ***Shear*** reference, offered as support for the contention that ***Shear*** teaches "partially disclosing each encoded interest in each set of interests to each unique entity" simply provides a recitation of specific examples of how the invention described by ***Shear*** may be used. None of these specific examples offered in col. 27 of the ***Shear*** reference teaches, describes, or in any suggests, "***partially disclosing***" or

"***partially revealing***" ***interests directly between two or more entities***, as is claimed by the Appellant in independent claims 10 and 17.

Further, as specifically discussed above, the Final Office Action suggests that "Shear discloses utilizing controls and rules with regards to distribution of content or matching interest in ***a VDE environment***, wherein delivery of only ***portions of content*** from one or more sources is provided (col. 27, lines 8-9, columns 23-30)." (emphasis added).

However, in col. 27, lines 27, lines 8-9, ***Shear*** merely explains that one of the numerous "Advantages" of the ***Shear*** invention is the capability to provide "delivery of ***portions of said control information*** from one or more sources." (emphasis added). Clearly, ***Shear*** is attempting to explain that the "***control information***" used by the VDE in determining matches can be received from a plurality of sources.

Specifically, as noted above, the VDE is described by ***Shear*** in col. 23, lines 9-11 as a "*virtual distribution environment*" which provides "a family of technologies by which applications can be created, modified, and/or reused." The ability of the ***Shear*** reference to retrieve "***portions***" of its "***control information***" from various sources for modifying how the "virtual distribution environment" will determine matches has nothing whatsoever to do with the partial disclosure disclosed and claimed by the Appellant. Consequently, no prima facie case of obviousness has been established in accordance with MPEP Section 706.02(j) and in accordance with the holdings of *In Re Fine*. This lack of a prima facie showing of obviousness means that the rejected claim is patentable under 35 U.S.C. §103(a). The basis for this patentability is the nonobvious language of independent claims 10 and 17.

For example, independent claim 10 includes the following novel language:

> "A computer-implemented process for automatically determining whether unique entities have any matched interests without disclosing non-matched interests, comprising:
>
> providing a set of interests for each entity;
>
> encoding each interest for each set of interests;
>
> ***partially disclosing each encoded interest in each set of interests to each unique entity***;
>
> automatically performing a comparison of each partially disclosed encoded interest with the partially disclosed interests in each other set of interests;
>
> determining whether there is a partial match of interests between the partially disclosed interests of any unique entities;
>
> ***continuing to automatically perform the partial comparison of each encoded interest for specific interests for as long as there is a partial match of the specific interests between any unique entities***; and
>
> automatically identifying interest matches between any unique entities through the continued automatic partial comparison of each encoded interest." (emphasis added)

Similarly, claim 17 recites the following novel language:

> "A computer-readable medium having computer executable instructions for identifying common interests between at least two entities without using a third party, said computer executable instructions comprising:
>
> ***partially revealing each interest of each entity to each other entity***;

determining whether any of the partially revealed interests match any other partially revealed interests by comparing the partially revealed interests;

continuing to partially reveal more of each partially matched interest of each entity to each other entity having a corresponding partially matched interest;

continuing to compare the partially matched interests; and

automatically determining whether the partially matched interests are common interests." (emphasis added)

Therefore, the Appellant respectfully traverses the rejection of independent claims 10 and 17, and thus the rejection of dependent claims 11-16 and 18-23, respectively, under 35 U.S.C. §103(a) over ***Shear*** in view of ***Hilsenrath*** in view of the non-obviousness of claims 10 and 17. Thus, the Appellant respectfully requests reversal of the rejection of claims 10-16 and 17-23 in view of the non-obviousness of claims 10 and 17, respectively.

X. SUMMARY

For the foregoing reasons, it is submitted that the Examiner's rejection of Claims 1-23 was erroneous. As such, reversal of the Examiner's decision is respectfully requested at the earliest opportunity.

Respectfully submitted,

Mark Watson

Mark A. Watson
Registration No. 41,370
Attorney for Appellant

Lyon & Harr
300 Esplanade Drive, Suite 800
Oxnard, California 93036
(805) 278-8855

Application No.	:	**09/681,790**
Confirmation No.	:	**1728**
Appellant	:	**DeVries**
Title	:	**A SYSTEM AND METHOD FOR SHARING MATCHED INTERESTS WITHOUT DISCLOSING NON-SHARED INTERESTS**
Filed	:	**June 5, 2001**
TC/A.U.	:	**3621**
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Customer No.	:	**27662**

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APPEAL BRIEF APPENDIX

The following claims 1-23 represent all the claims involved in the appeal of the above-identified application and are provided in accordance with the requirements of 37 CFR 1.192:

CLAIMS

1 (Original). A system for determining shared interests between at least two sets of interests, comprising:

progressively comparing each interest in each set of interests to interests in every other set of interests;

analyzing the results of the progressive comparison for determining whether any interests belonging to any set of interests partially matches any interests in any other set of interests;

terminating the progressive comparison for specific interests with respect to each set of interests wherein the specific interests do not partially match any interests; continuing the progressive comparison for specific interests with respect to each set of interests wherein the specific interests do partially match any interests; and

determining all shared interests between any of the at least two sets of interests by continuing the progressive comparison of interests to identify all interests belonging any set of interests that completely match interests in any other set of interests.

2 (Original). The system of claim 1 wherein each set of interests is encoded using a one-way hash for preventing an identification of partially matched encoded interests.

3 (Original). The system of claim 1 wherein each interest in each set of interests is encrypted.

4 (Original). The system of claim 1 wherein each set of interests is identified by unique users.

5 (Original). The system of claim 1 wherein each set of interests is identified by unique users from a list of predefined interests.

6 (Original). The system of claim 1 further comprising determining whether specific interests are closely matched with any interests in any other set of interests after terminating the progressive comparison for specific interests which do not partially match any interests.

7 (Original). The system of claim 6 wherein interests are categorized in a hierarchical structure in order to facilitate the determination as to whether the specific interests are closely matched with any interests in any other set of interests.

8 (Original). The system of claim 1 wherein all shared interests are disclosed between sets of interests having the shared interests.

9 (Original). The system of claim 1 wherein progressively comparing each interest further comprises progressively transmitting each interest via at least one encrypted communications channel.

10 (Original). A computer-implemented process for automatically determining whether unique entities have any matched interests without disclosing non-matched interests, comprising:

providing a set of interests for each entity;

encoding each interest for each set of interests;

partially disclosing each encoded interest in each set of interests to each unique entity;

automatically performing a comparison of each partially disclosed encoded interest with the partially disclosed interests in each other set of interests;

determining whether there is a partial match of interests between the partially disclosed interests of any unique entities;

continuing to automatically perform the partial comparison of each encoded interest for specific interests for as long as there is a partial match of the specific interests between any unique entities; and

automatically identifying interest matches between any unique entities through the continued automatic partial comparison of each encoded interest.

11 (Original). The computer-implemented process of claim 10 wherein encoding each interest comprises encoding each interest using a one-way hash.

12 (Original). The computer-implemented process of claim 10 wherein automatically identifying interest matches between any unique entities comprises identifying complete interest matches.

13 (Original). The computer-implemented process of claim 10 wherein automatically identifying interest matches between any unique entities comprises identifying close interest matches.

14 (Original). The computer-implemented process of claim 10 wherein partially disclosing each encoded interest in each set of interests to each unique entity comprises transmitting each partially discloses interest via at least one encrypted communications channel.

15 (Original). The computer-implemented process of claim 10 wherein encoding each interest for each set of interests comprises using a common encoding scheme for each set of interests.

16 (Original). The computer-implemented process of claim 15 wherein a new common encoding scheme is used each time new sets of interests are compared.

17 (Original). A computer-readable medium having computer executable instructions for identifying common interests between at least two entities without using a third party, said computer executable instructions comprising:

partially revealing each interest of each entity to each other entity;

determining whether any of the partially revealed interests match any other partially revealed interests by comparing the partially revealed interests;

continuing to partially reveal more of each partially matched interest of each entity to each other entity having a corresponding partially matched interest;

continuing to compare the partially matched interests;

and

automatically determining whether the partially matched interests are common interests.

18 (Original). The computer-readable medium of claim 17 wherein the common interests are exactly matched interests.

19 (Original). The computer-readable medium of claim 17 wherein the common interests are closely matched interests.

20 (Original). The computer-readable medium of claim 19 wherein a set of all possible

interests is categorized in a hierarchical structure in order to determine whether the common interests are closely matched interests.

21 (Original). The computer-readable medium of claim 17 wherein each interest is encoded prior to partially revealing each interest of each entity to each other entity.

22 (Original). The computer-readable medium of claim 17 wherein each interest of each entity is partially revealed to each other entity via a secure communications channel.

23 (Original). The computer-readable medium of claim 22 wherein the secure communications channel is an encrypted communication channel.

Respectfully submitted,

Mark Watson

Mark A. Watson
Registration No. 41,370
Attorney for Appellant

Lyon & Harr
300 Esplanade Drive, Suite 800
Oxnard, California 93036
(805) 278-8855